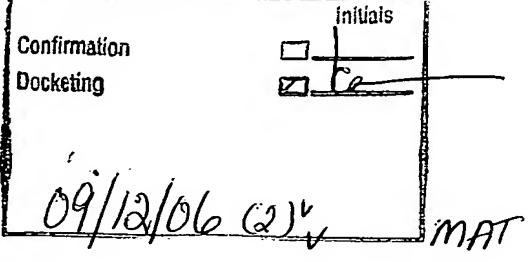


From the INTERNATIONAL SEARCHING AUTHORITY

To: MARIA A. TREVISAN	PCT		
WOLF, GREENFIELD & SACKS, P.C. 600 ATLANTIC AVENUE BOSTON, MA 02210	NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION		
	(PCT Rule 44.1)		
	Date of mailing (day/month/year) 12 JUL 2006		
Applicant's or agent's file referenœ C1005.70014 ₩ 000	FOR FURTHER ACTION See paragraphs 1 and 4 below		
International application No. PCT/US05/10597	International filing date (day/month/year) 29 March 2005 (29.03.2005)		
Applicant CYTOMATRIX, LLC			
have been established and are transmitted herewith.	arch report and the written opinion of the International Searching Authority		
Filing of amendments and statement under Article 19: The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46): When? The time limit for filing such amendments is normally two months from the date of transmittal of the international			
search report.			
Where? Directly to the International Bureau of WIF 1211 Geneva 20, Switzerland, Facsimile N			
For more detailed instructions, see the notes on the			
The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.			
3. With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:			
the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.			
no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.			
4. Reminders Shortly offer the expiration of 18 months from the priority di	ate, the international application will be published by the International		
Bureau. If the applicant wishes to avoid or postpone publica priority claim, must reach the International Bureau as provided technical preparations for international publication.	tion, a notice of withdrawal of the international application, or of the in Rules 90bis.1 and 90bis.3, respectively, before the completion of the		
The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.			
examination must be filed if the applicant wishes to postpone	the entry into the national phase until 30 months from the priority date ithin 20 months from the priority date.		
	oths (or later) will apply even if no demand is filed within 19 months.		
See the Annex to Form PCT/IB/301 and, for details about the Volume II, National Chapters and the WIPO Internet site.	applicable time limits, Office by Office, see the PCT Applicant's Guide,		
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450	Sanjoo Jalla Telephone No. 571-272-1600		
Facsimile No. (571) 273-3201			
Form PCT/ISA/220 (January 2004)	(See notes on accompanying sheet		
Confirmation	Initials		
DOCKETED Confirmation Docketing			

JUL 19 2006



Wolf, Greenfield & Sacks, P.C. Docketing Depto

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BECEINED

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference		Form PCT/ISA/220 ere applicable, item 5 below.
International application No. PCT/US05/10597	International filing date (day/month/year) 29 March 2005 (29.03.2005)	(Earliest) Priority Date (day/month/year) 29 March 2004 (29.03.2004)
Applicant CYTOMATRIX, LLC		
according to Article 18. A copy is being	n prepared by this International Searching Aug transmitted to the International Bureau.	thority and is transmitted to the applicant
This international search report consists It is also accompanie	d by a copy of each prior art document cited	in this report.
the international a translation of a of a translation b. With regard to any nucleot Certain claims were found Unity of invention is lacki With regard to the title, the text is approved as subs		, which is the language ch (Rules 12.3(a) and 23.1(b))
	mitted by the applicant. ed, according to Rule 38.2(b), by this Authority m the date of mailing of this international searc	
6. With regard to the drawings, a. the figure of the drawings to be as suggested by the as selected by this as selected by this	published with the abstract is Figure No	est a figure.

Form PCT/ISA/210 (first sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No.

PCT	Л	IS	05	5/1	05	59	7
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A. CLASSIFICATION OF SUBJECT MATTER IPC: C12N 5/08 (2006.01)					
USPC: 435/37 According to International Patent Classification (IPC) or to both nati	ional classification and IPC				
B. FIELDS SEARCHED					
Minimum documentation searched (classification system followed by classification symbols) U.S.: 435/37					
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched					
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) STN/ WEST					
C. DOCUMENTS CONSIDERED TO BE RELEVANT					
Category * Citation of document, with indication, where ap	opropriate, of the relevant passages	Relevant to claim No.			
X Wood et. al. Regulatory T cells in Transplantation To Vol 3. pages 199-210, especially page 208.					
Y Wood et. al. Regulatory T cells in Transplantation To	Wood et. al. Regulatory T cells in Transplantation Tolerance. Nature Reviews. March 2003, 1-79				
Y US 5,541,107 (Naughton et. al.)30 July 1996 (30.07.)	Vol 3. pages 199-210, especially page 208. US 5,541,107 (Naughton et. al.)30 July 1996 (30.07.1996), column 24, lines 25-45, Abstract. 1-79				
Further documents are listed in the continuation of Box C.	See patent family annex.				
Special categories of cited documents:	"T" later document published after the inte- date and not in conflict with the applic				
"A" document defining the general state of the art which is not considered to be of particular relevance	principle or theory underlying the inve				
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the considered novel or cannot be considered when the document is taken alone				
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the considered to involve an inventive step combined with one or more other such	when the document is			
"O" document referring to an oral disclosure, use, exhibition or other means	being obvious to a person skilled in the				
"P" document published prior to the international filing date but later than the priority date claimed	"&": document member of the same patent	<u></u>			
Date of the actual completion of the international search	Date of mailing of the international search	h report			
17 April 2006 (17.04.2006)	1 & JUL ZUUb	OI ha			
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US	Authorized officer	Home you			
Commissioner for Patents	Sanjoo Jalla	•			
P.O. Box 1450 Alexandria, Virginia 22313-1450	Telephone No. 571-272-1600				
Facsimile No. (571) 273-3201					

Form PCT/ISA/210 (second sheet) (April 2005)

From the INTERNATIONAL SEARCHING AUTH	IORITY				
To: MARIA A. TREVISAN WOLF, GREENFIELD & SACKS, P.C. 600 ATLANTIC AVENUE BOSTON, MA 02210		PCT			
		WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY			
			(PCT Rule 43bis.1)		
		Date of mailing (day/month/year)	12 JUL 2005		
Applicant's or agent's file reference		FOR FURTHER	See paragraph 2 below		
C1005.70014	International filing date	(day/month/year)	Priority date (day/month/year)		
International application No.					
PCT/US05/10597 International Patent Classification (IPC)	or both national classificat		29 March 2004 (29.03.2004)		
· · ·	or ood. Introduct viassification				
IPC: C12N 5/08(2006.01) USPC: 435/372		Γ-	fnitials		
Applicant		Co	nfirmation		
CYTOMATRIX, LLC			cketing		
	1. This opinion contains indications relating to the following items:				
Box No. I Basis of the	ne opinion		10/12/06		
Box No. II Priority	Box No. II Priority				
Box No. III Non-estab	lishment of opinion with re	gard to novelty, inve	entive step and industrial applicability		
Box No. IV Lack of ur	nity of invention,		٠٠ ٠		
	statement under Rule 43 bis ity; citations and explanation		tatement		
Box No. VI Certain do	ocuments cited		DOCKETED		
Box No. VII Certain de	fects in the international ap	plication			
Box No. VIII Certain ob	III Certain observations on the international application		JUL 19 2006		
2. FURTHER ACTION					
International Preliminary Examin	ing Authority ("IPEA") e the IPEA and the chosen	xcept that this does IPEA has notified t	be considered to be a written opinion of the solution of the s		
IPEA a written reply together, who	ere appropriate, with amend	iments, before the ex	PEA, the applicant is invited to submit to the expiration of 3 months from the date of mailing whichever expires later.		
of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later. For further options, see Form PCT/ISA/220.					
3. For further details, see notes to For	m PCT/ISA/220.				
Name and mailing address of the ISA/	US Date of compl	etion of this opinion	Authorized officer		
Mail Stop PCT, Attn: ISA/US Commissioner for Patents	. · 17 April 2006	(17.04.2006)	Sanjoo Jalla James 14mm		
P.O. Box 1450		(1.1011200)			
Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		· *	Telephone No. 571-272-1600		
Form PCT/ISA/237 (cover sheet) (April 2	2005)				

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US05/10597

Box No. I Basis of this opinion				
1. With regard to the language, this opinion has been established on the basis of:				
the international application in the language in which it was filed				
a translation of the international application into, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).				
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:				
a. type of material				
a sequence listing				
table(s) related to the sequence listing				
b. format of material				
on paper				
in electronic form				
c. time of filing/furnishing				
contained in the international application as filed.				
filed together with the international application in electronic form.				
furnished subsequently to this Authority for the purposes of search.				
In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.				
4. Additional comments:				
Form PCT/ISA/237/Box No. D (April 2005)				

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No. PCT/US05/10597

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)

Claims 1-79

Claims 80

Inventive step (IS)

Claims NONE

Claims 1-80

Industrial applicability (IA)

Claims 1-80

YES

Industrial applicability (IA)

Claims 1-80

Claims NONE

NO

2. Citations and explanations:

Claim 1-73 lack an inventive step under PCT Article 33(3) as being obvious over Wood et. al. (Nature Reviews. 2003; 3: 199-210) in view of U.S. Patent 5,541,107.

Wood et al. teaches development of regulatory T cells by culturing mouse CD4+CD25+ cells in the presence of IL-2 and allogeneic stimulators resulted in the clonal expansion of T reg cells (see in particular page 208, right hand column, 2nd paragraph).

Wood et. al. do not teach production of regulatory T cells by culturing lymphreticular stromal cells with hematopoietic cells in a matrix.

The '107 Patent teaches a three-dimensional cell culture system that can be used to culture variety of different cells in vitro for prolongred periods of time (see in particular abstract). The '107 Patent further teaches growing cells on pre-established stromal support matrix. The stromal support matrix comprises stromal cells, such as bone marrow etc. The stromal matrix provides the support, growthfactors, and regulatory factors necessary to sustain long-term active proliferation of cells in culture. When grown in this three-dimensiaonl system, the proliferating cells mature and segregate properly to form components of adult tissues analogous to counterparts found in vivo (see in particular, abstract). The .107 Patent further teaches inoculation of bone marrow with hematopoietic cells (see in particular col. 24, section 6.3) and culturing stromal cells and hematopoietic cells from same individual i.e. autologous) (see in particular col. 25, lines 3-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a three-dimensional cell culture system i.e. matrix comprising lymphreticular stromal cells and hematopoietic cells as taught by the ,107 Patent to make regulatory T cells as taught by Wood et. al.

The ordinary artisan at the time the invention was made would have been motivated to use a three-dimensional cell culture system i.e. matrix comprising lymphreticular stromal cells and hematopoietic cells as taught by the ,107 Patent to make regulatory T cells as taught by Wood et al. because The stromal matrix provides the support, growth factors, and regulatory factors necessary to sustain long-term active proliferation of cells in culture. When grown in this three-dimensiaonl system, the proliferating cells mature and segregate properly to form components of adult tissues analogous to counterparts found in vivo (see in particular, abstract).

From the teachings of the references, it was apparent that one of ordinary skill in the art would have a reasonable expectation of success in arriving at the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by references, especially in the absence of evidence to the contrary.

Claim 80 lacks novelty under PCT Article 33(2) as being anticipated by Wood et. al. (Nature Reviews. 2003; 3: 199-210) in view of U.S. Patent 5,541,107).

Wood et al. teach generation of CD4+CD25+ T regulatory cells (see in particular page 208, right hand column, 2nd paragraph). It is noted that Wood et al. do not explicitly teach isolation of regulatory T cells as recited in claim 80, however it is noted that claim 80 is drawn to a product and the product is a product irrespective of the method it was obtained in the ansence of structural difference.

Form PCT/ISA/237 (Box No. V) (April 2005)

From the INTERNATIONAL SEARCHING AUTHORITY **PCT** To: MARIA A. TREVISAN WOLF, GREENFIELD & SACKS, P.C. NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND **600 ATLANTIC AVENUE** BOSTON, MA 02210 THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION (PCT Rule 44.1) Date of mailing (day/month/year) Applicant's or agent's file reference FOR FURTHER ACTION See paragraphs 1 and 4 below C1005.70014 International filing date International application No. (day/month/year) 29 March 2005 (29.03.2005) PCT/US05/10597 **Applicant** CYTOMATRIX, LLC The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority \boxtimes have been established and are transmitted herewith. Filing of amendments and statement under Article 19: The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46): When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report. Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 338.82.70. For more detailed instructions, see the notes on the accompanying sheet. The applicant is hereby notified that no international search report will be established and that the declaration under 2. Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith. With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that: 3. the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices. no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made. Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication. The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date. Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices. In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months. See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the PCT Applicant's Guide, Volume II, National Chapters and the WIPO Internet site. Authorized officer Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Sanjoo Jalla Commissioner for Patents P.O. Box 1450 Telephone No. 571-272-1600 Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201
Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article," "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report and the written opinion of the International Searching Authority, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only (see *PCT Applicant's Guide*, Volume I/A, Annexes B1 and B2).

The attention of the applicant is drawn to the fact that amendments to the claims under Article 19 are not allowed where the International Searching Authority has declared, under Article 17(2), that no international search report would be established (see PCT Applicant's Guide, Volume I/A, paragraph 296).

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Preliminary Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When? Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How? Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled:
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

- 1. [Where originally there were 48 claims and after amendment of some claims there are 51]: "Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
- 2. [Where originally there were 15 claims and after amendment of all claims there are 11]: "Claims 1 to 15 replaced by amended claims 1 to 11."
- 3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
 - "Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or "Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
- 4. [Where various kinds of amendments are made]: "Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under Article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

If a demand for international preliminary examination is made, the written opinion of the International Searching Authority will, except in certain cases where the International Preliminary Examining Authority did not act as International Searching Authority and where it has notified the International Bureau under Rule 66.1bis(b), be considered to be a written opinion of the International Preliminary Examining Authority. If a demand is made, the applicant may submit to the International Preliminary Examining Authority a reply to the written opinion together, where appropriate, with amendments before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later (Rule 43bis.1(c)).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the PCT Applicant's Guide, Volume II.